

# Lenses and Mirrors

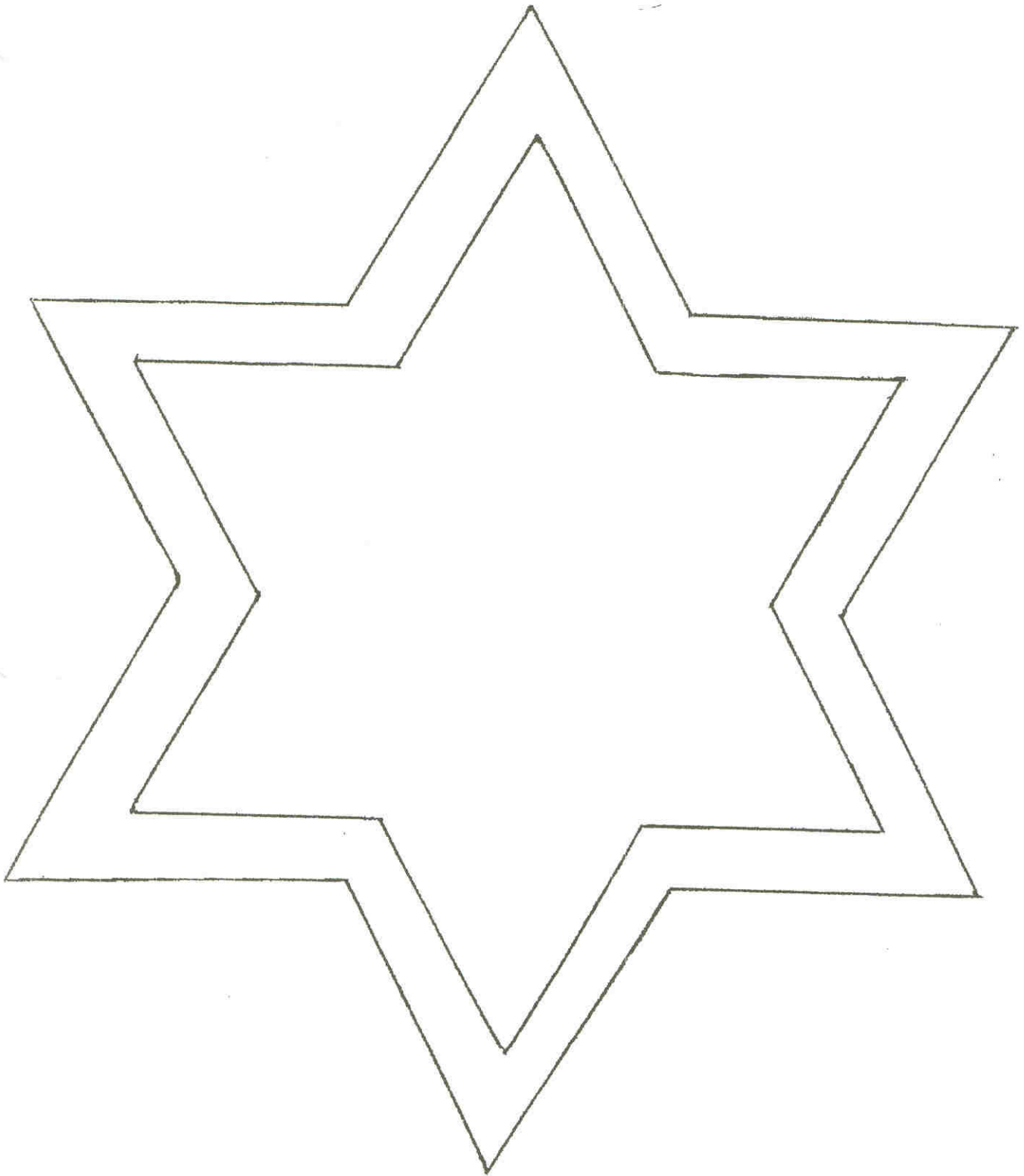
**Don't try to do these until you have done the book work.**

**I will assign one task per partner.**

1. Convex lens- Hold the lens so that the object is in focus and larger. Draw a ray diagram. Calculate the distance of the image (do). Calculate the focal point of the mirror.
2. Convex lens- Hold the lens so that the object is inverted and smaller. Draw a ray diagram. Calculate the image height. Calculate the height of this building. Do Percent Error.
3. Concave lens- Hold the lens so that the object is right side up and smaller. Draw a ray diagram. Calculate distance of the image. Calculate the focal length. Calculate the height of the telephone pole outside of my room. Do Percent Error.
4. Use a flat side of a shaving mirror from home (one/group) Using the flat side trace the object below. Look in the mirror and place a piece of paper over your hand and trace the object by looking in the mirror only.
5. Use the other side of the shaving mirror. Is it concave or convex? Hold an object so that it is larger and in focus. Draw a ray diagram. Calculate the distance of the image. Calculate the focal length.
6. Use the large concave mirror. Draw a ray diagram Calculate the distance of the image. Calculate the focal length. Calculate the height of the telephone outside my room using this mirror. Do Percent Error
7. Use the side mirror on the passenger side of a car and calculate the height of a car that is behind your car. Do Percent Error.

**\*\*\* All students will do this as the fourth task.\*\*\***

\* To find the height of the tall objects you will use the sun and a meter stick to find the angle of the sun. Then using this angle and the length of the shadow you can find the correct height of the object.



Place pencil anywhere between the two lines as a point to begin.  
Place a piece of paper to cover the star where you must look into the mirror.  
Place the mirror above the star.  
Look into the mirror and draw a line between the two stars.